

# SP MANWEB

## Reinforcement to the North Shropshire Electricity Distribution Network



Document Reference: 6.7.2  
Environmental Statement Appendix 7.2  
Ecology and Biodiversity Baseline and Assessment

PINS Reference: EN020021  
Regulation Reference: 5(2)(a)  
November 2018



**SP MANWEB**

**Reinforcement to the North Shropshire  
Electricity Distribution Network**

**APPENDIX 7.2  
ECOLOGY AND BIODIVERSITY  
BASELINE AND ASSESSMENT**

**Environmental Statement**

**DCO Document 6.7.2  
November 2018  
PINS Reference EN020021**

*This page is intentionally blank*

**The Planning Act 2008**

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure)  
Regulations 2009**

**Regulation 5(2)(a)**

**Reinforcement to the North Shropshire Electricity Distribution Network**

**Environmental Statement: Appendix 7.2 – Ecology and Biodiversity Baseline  
and Assessment**

<b>Document Reference No.</b>	6.7.2
<b>Regulation No.</b>	Regulation (5)(2)(a)
<b>Author</b>	Avian Ecology
<b>Date</b>	09 November 2018
<b>Version</b>	V1
<b>Planning Inspectorate Reference No.</b>	EN020021

SP Manweb plc, Registered Office: 3 Prenton Way, Prenton, CH43 3ET. Registered in England No. 02366937

*This page is intentionally blank*

## APPENDIX 7.2

### ECOLOGY BASELINE AND ASSESSMENT

#### 1.1 INTRODUCTION

1.1.1 This Appendix outlines the ecology baseline which has informed the Environmental Impact Assessment and Environmental Statement (ES), with reference to designated sites, protected and notable species and habitats of principal importance (priority habitats and species) as defined under Section 41 of the Natural Environment and rural Communities (NERC) Act 2006.

#### 1.2 BASELINE ENVIRONMENT

1.2.1 The ecological baseline forms the basis for the identification and description of the changes that may result from the Proposed Development, established through desk study and field surveys. Designated features and other sensitive ecological receptors are identified.

1.2.2 Potential sensitive ecological receptors are identified through a review of the baseline studies, by responses from consultees and through site survey.

##### Existing Baseline

1.2.3 Habitats present across the route of the Proposed Development based on extended Phase 1 habitat surveys are described in Appendix 7.3 (**DCO Document 6.7.3**) and shown on Figure 7.2 (**DCO Document 6.14**).

1.2.4 The ecological baseline forms the basis for the identification and description of the effects that may result from a proposed development. It establishes the value and potential sensitivity of ecological features, and their distribution, in relation to a proposed development. The baseline describes the ecological context within which a proposed development will take place, including biodiversity networks and habitat connectivity.

1.2.5 Ecological features (also known as ecological receptors) are identified through desk-based study and review of biological records available from

consultation with Shropshire Council, and organisations such as the Shropshire Ecological Data Network (SEDN) and Shropshire Wildlife Trust (SWT), Royal Society for the Protection of Birds (RSPB), British Trust for Ornithology (BTO), Canal and Rivers Trust and other consultee responses, and from habitat and species surveys.

### Definition of study and survey areas

- 1.2.6 The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities.
- 1.2.7 In relation to the Proposed Development, the zones of influence that extend beyond the direct land-take required within the Order Limits have been identified based upon the nature of the completed project and the construction activities to be undertaken, informed by the consultation process undertaken with nature conservation representative and organisations including Shropshire Council, Natural England, Shropshire Wildlife Trust and RSPB. This information was used to understand and establish suitable zones of influence, informed by professional judgement and available information about the behaviours, life cycle and habitat requirements of ecological features and their likely sensitivity to effects arising from the Proposed Development.
- 1.2.8 The zones of influence were used to establish the scope of baseline ecological surveys and the extent of survey area and desk study.
- 1.2.9 In summer 2016, a broad-scale Phase 1 habitat survey and mapping exercise was undertaken of a 500m wide corridor along the preferred Broad Route Corridor (see Section 2.4 in Chapter 2 'Alternatives and Design Evolution' (**DCO Document 6.2**)). The purpose of this survey was to gather an initial high level habitat baseline to inform consultations and the scoping of further surveys. The broad-scale Phase 1 habitat mapping was based on surveys undertaken from publicly accessible land, footpaths and roads, in



---

combination with a review of online aerial imagery and desk study review of statutory and non-statutory designated sites.

- 1.2.10 The ecological assessment focuses on those areas which are likely to experience significant effects, as set out in the CIEEM Guidelines 2016<sup>1</sup>. This also accords with the EIA Regulations, which require the identification of the ‘*likely significant effects of the proposed development on the environment*’ (Schedule 4 Part 1 Para 20). The assessment methodology is set out in Appendix 7.1 (**DCO Document 6.7.1**).
- 1.2.11 Suitable survey areas and desk study areas were identified to inform the valuation of ecological features as part of the EIA. This informed the selection of important ecological features scoped in to the assessment. The extent of the survey and desk study areas varied in accordance with the typical distribution and movements of individual species and the likely mobility of qualifying interests of statutory designated sites. These are described further below, and in Table A7.2.1.
- 1.2.12 The ecological survey area for the Proposed Development generally covered a corridor approximately 50m either side of the Order Limits, which was extended as necessary to take into account habitats and species potentially affected by access routes and additional land take that might be required for construction. The objective was to ensure the survey extents provided appropriate baseline information on habitats and species potentially directly or indirectly affected by the Proposed Development to ensure they could be given due consideration within the assessment. The extent of additional survey areas beyond the survey corridor varied depending on the ecological feature being considered, the ‘zone of influence’ of potential effects of the proposed development on ecological features, the evolving design, and

---

<sup>1</sup> Originally assessed under the provisions of the 2016 Guidelines which were updated in September 2018. Chartered Institute of Ecology and Environmental Management (2018). Chartered Institute of Ecology and Environmental Management *Guidelines for Ecological Impact Assessment I the UK and Ireland, Terrestrial, Freshwater, Coastal and Marine* CIEEM, Winchester

information gathered from consultees.

- 1.2.13 Habitat and species surveys were undertaken in 2016 and 2017, with minor additional survey information gathered in 2018 to reflect the evolving detailed alignment, and a description of the survey extents are described in Table A7.2.1. The need or otherwise for additional surveys at specific locations was regularly reviewed as surveys progressed.

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
Habitats  Local	The Order Limits are described in detail in Chapter 3 'The Proposed Development' ( <b>DCO Document 6.3</b> ). Works are short term (1-2 days at each individual pole) with land take and physical disturbance limited to the Order Limits. There would be minimal indirect habitat disturbance beyond the Order Limits. A precautionary 100m wide survey corridor is considered sufficient to capture information on habitats within and adjoining the Order Limits.	Extended Phase 1 habitat survey along the Proposed Development, continuing on from an initial broad-scale Phase 1 habitat survey of a 500m wide corridor completed in 2016 during route option appraisal. The survey area extended approximately 50m either side of the Order Limits, but was extended where necessary to ensure that features of ecological interest/value outside the corridor were mapped and described.  The survey methodology followed that set out in Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit' JNCC (2010), 'extended' to allow the recording of additional features of interest, and assesses the potential for protected or notable species or species listed under Section 41 of the NERC Act 2006, as recommended in the Guidelines for Preliminary

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
		<p>Ecological Appraisal (CIEEM 2017) and in line with British Standard 42020:2013 Biodiversity – Code of Practice for Planning and Development.</p> <p><b>Scoped in to the assessment due to potential loss of Priority Habitat listed under S41 of the NERC Act and habitat connectivity only.</b></p>
<p>Species-rich vegetation</p> <p>Local</p>	As for habitats above.	<p>Certain locations may have potential to support vegetation communities of particular interest, for example in the vicinity of Ruewood Pastures Site of Special Scientific Interest (SSSI) and near Moorfields Local Wildlife Site (LWS), Loppington. These locations were subject to more detailed botanical (National Vegetation Classification, or NVC), survey based on Rodwell, J. (1991) British Plant Communities Vols. 1-5.</p> <p><b>Scoped in to the assessment due to potential loss of Priority Habitat listed under S41 of the NERC Act and habitat connectivity only.</b></p>
<p>Hedgerows</p> <p>Local</p>	As for habitats above.	<p>Hedgerows extending to approximately 50m either side of the Order Limits were described and mapped .</p>

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
		<p>Sections of hedgerow adjacent to poles or where likely to be directly affected (e.g. short sections to be lifted and replaced were assessed for their potential to qualify as 'Important' under the Hedgerows Regulations 1997 and were considered for full survey following the Hedgerow Survey Handbook. A standard procedure for local surveys in the UK. (Defra, 2007) and Clements DK and Tofts RJ Hedgerow Evaluation and Grading Systems (HEGS): <i>A Methodology for the Ecological Survey, Evaluation and Grading of Hedgerows</i> (1992).</p> <p><b>Scoped in to the assessment due to potential loss of Priority Habitat listed under S41 of the NERC Act and habitat connectivity only</b></p>
Trees Local	To ensure the overhead line is 'resilient' against tree and vegetation damage in 'abnormal weather conditions' damage from trees and vegetation during major storm events, clearance guidance is provided in the Electricity Networks Association (ENA) publication ETR 132 (2005). This defines distances within which trees	An arboricultural survey was undertaken of trees within 25m either side of the Order Limits and along or adjacent to access tracks where they may potentially be affected. This primarily related to trees within the Order Limits. Survey methods followed British Standard BS5837 Trees in Relation to Design, Demolition and Construction - Recommendations. 2012.

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
	<p>may require removal or cutting back to ensure adequate and safe clearance distances. Beyond this clearance area, the construction and operation of the preferred one route would not have any effects on trees.</p>	<p>Veteran trees were also identified where present from the combined findings of the arboricultural survey, extended Phase 1 habitat survey and desk study.</p> <p><b>Scoped in to the assessment due to potential loss of Priority Habitat listed under S41 of the NERC Act and habitat connectivity only (see also effects under Bats)</b></p>
<p>Local</p>	<p>The Order Limits are described in detail in Chapter 3 'The Proposed Development' (. Works are short term (1-2 days at each individual pole) with land take and physical disturbance limited to the Order Limits. There will be minimal indirect habitat disturbance beyond the Order Limits. A precautionary 100m wide survey corridor is considered sufficient to capture information on within and adjoining the Order Limits.</p>	<p> surveys to search for signs of presence/ activity including setts, latrines, paths etc. within 50m either side of the Order Limits.</p> <p>Information from the survey has been recorded as a separate Confidential Technical Appendix (<b>DCO Document 7.9</b>).</p> <p><b>Scoped in to the assessment due to potential direct effects on or their setts as protected under the Protection of Act 1992.</b></p>
<p>Bats County</p>	<p>The Order Limits are described in detail in Chapter 3 'The Proposed Development' (<b>DCO Document 6.3</b>). Works are short term (1-2 days at each individual pole) with</p>	<p>Preliminary bat roost assessments (PRA) (ground-based) of trees likely to be affected by works within 50m of the Order Limits and where trees may be affected by access tracks (as described</p>

**Table A7.2.1 Baseline Field Surveys and Study Areas**

Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
	<p>land take and physical disturbance limited to the Order Limits. There would be no night-time working except a single instance of scaffold erection over a railway line and no lighting of temporary laydown areas (lighting would be further controlled through the draft CEMP (<b>DCO Document 6.3.2</b>)). The operational overhead line will not be lit. There would be minimal indirect habitat disturbance beyond the Order Limits. A 100m wide survey corridor is considered sufficient to capture information on bats within and adjoining the Order Limits.</p>	<p>above under Trees). These have identified trees with low, medium or high bat roost potential.</p> <p>Activity (transect) surveys at selected locations to identify any important foraging and commuting flyways. The survey area for activity surveys was selected to capture wider activity patterns across a representative variety of habitats in the vicinity of the Proposed Development.</p> <p>Trees directly affected by the project (felled or cut back) with medium or high bat roost potential will be subject to further survey to identify whether or not they support bat roosts, for example through climbing tree roost inspections.</p> <p>Survey methodologies followed Bat Conservation Trust guidance, Collins J. 'Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition. (2016).</p> <p>All UK bats and their roosts are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended) and the Habitat Regulations 2017 as European Protected Species (EPS). So far as practically achievable, the design has</p>

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
		<p>avoided habitat features likely to be used by bats. All species recorded during baseline surveys are common and widespread species and overall activity was low. Bats are assigned a County level of importance, on the basis of their legislative protection and local context.</p> <p><b>Scoped into assessment due to the potential for effects on bat roosts due to tree removal during construction of the Proposed Development.</b></p>
<p>Dormouse</p> <p>County</p>	<p>The Order Limits are described in detail in Chapter 3 'The Proposed Development' (<b>DCO Document 6.3</b>). Works are short term (1-2 days at each individual pole) with land take and physical disturbance limited to the Order Limits.</p> <p>There are no historic records for dormice in the area.</p>	<p>No specific presence/ absence surveys were considered necessary to inform the assessment, given the current known distribution of dormice in Shropshire and the relatively limited extents of habitat removal required for the proposed development. It is considered that information from local records obtained through desk study and consultation, and data on habitat suitability gathered during the Extended Phase 1 habitat survey, are sufficient to inform the assessment and any mitigation that might be proposed. Such information was also be used to review the potential need for targeted surveys at specific locations, for example based on likely</p>

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
		<p>construction effects combined with desk study records and presence of high suitability habitat and connectivity with mature woodlands. This review did not show that further surveys would be necessary.</p> <p>Natural England’s Standing Advice for dormice<sup>2</sup> states that there is no requirement to survey for dormice if the area provides unsuitable habitat for the species and development is unlikely to affect dormice.</p> <p>The extended Phase 1 habitat survey found few habitat locations potentially suitable for dormice and these were generally poorly connected to more suitable habitat in the wider landscape, often being isolated within open arable fields. Only small sections of species-poor hedgerow (approximately 5m wide) of low/unsuitable habitat value to dormice are likely to be affected, for a temporary period only, which is not considered to present a significant barrier to animals (if present) moving along the hedgerow network.</p> <p><b>Scoped out of the assessment.</b></p>

<sup>2</sup> <https://www.gov.uk/guidance/hazel-or-common-dormice-surveys-and-mitigation-for-development-projects>



Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
Reptiles  County	<p>The Order Limits are described in detail in Chapter 3 'The Proposed Development' (<b>DCO Document 6.3</b>) and would occupy a restricted footprint . Works are short term (1-2 days at each individual pole) with land take and physical disturbance limited to land within the Order Limits.</p> <p>Records of reptiles for the area are very limited – likely due to a combination of the presence of lower value or unsuitable habitat for reptiles (for example arable land or hardstanding areas), and under-recording generally.</p>	<p>Natural England’s Standing Advice<sup>3</sup> for reptiles states that surveys are only required if the development site has habitat suitable for reptiles, will alter the water levels of the site or surrounding area, will break apart suitable habitat for reptiles and/or distribution and historical records suggest they may be present</p> <p>The extended Phase 1 habitat survey sought to identify areas of suitable reptile habitat. Very few areas of potentially suitable habitat were identified (of restricted extent), with the majority of the land occupied by arable crops or improved grassland of low value for reptiles. More suitable habitat, where present, was limited in both extent and degree of connectivity to higher value habitat in the wider area. The route of the Proposed Development is considered to have low potential for reptiles overall.</p> <p>Given the restricted footprint of the construction and operational phases of the proposed development within a largely agricultural area, no specific presence/ absence surveys are considered necessary to inform the</p>

<sup>3</sup> <https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences>

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
		<p>assessment.</p> <p>While reptiles may be present within the area, the Proposed Development will not isolate, fragment or cause the loss of areas of high value reptile habitat either during the construction phase or during its operational lifetime. It is considered that information from local records obtained through desk study and consultation, and habitat suitability gathered during the Extended Phase 1 habitat survey, is sufficient to inform the assessment and ensure that suitable mitigation might be proposed. Such information was also used review the potential need for targeted surveys at specific locations, but no further survey was considered necessary.</p> <p><b>Scoped in to the assessment in relation to good practice mitigation measures only to be set out in the draft CEMP (DCO Document 6.3.2).</b></p>
Amphibians including great crested newts  County	The Order Limits are described in detail in Chapter 3 'The Proposed Development' (DCO Document 6.3) and would be approximately 25m wide for the overhead line. Works are short term (1-2	Waterbodies within the 50m of the Order Limits and beyond this where required, identified from aerial images, desk study and the Extended Phase 1 habitat survey, were subject to Habitat Suitability Assessment using HSI methodology

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
	<p>days at each individual pole) with land take and physical disturbance limited to the Order Limits.</p> <p>As a precautionary approach, where the Order Limits for the overhead line lie within 50m of ponds, great crested newts are considered potentially at risk from disturbing or damaging activities. The majority of the habitat loss would represent improved grassland of low value to foraging individuals only. Great crested newts, if present, are less likely to use open arable or grazed improved grassland fields and favour more suitable habitat with better shelter such as field boundary hedgerows, woodland, scrub and ruderal marginal vegetated areas. Direct loss of or damage to hedgerows, ruderal vegetation, woodland or scrub habitat could result in the loss of suitable refuge</p>	<p>(Oldham et al 2000<sup>4</sup>, and ARG UK 2010<sup>5</sup>) to identify potential to support great crested netws (GCN)</p> <p>GCN presence/ absence surveys of accessible ponds within this survey area were undertaken using Environmental DNA (e-DNA) methodology (Biggs et al. 2014a)<sup>6</sup> with analysis undertaken by a suitably equipped laboratory in adherence to the analysis methodology outlined within the DEFRA Project WC1067 report (Biggs et al., 2014b<sup>7</sup>). GCN were confirmed present in a number of ponds as described in Appendix 7.6 (<b>DCO Document 6.7.6</b>).</p> <p>Great crested newts are protected under the Wildlife and Countryside Act 1981 (as amended) and the Habitat Regulations 2017 as European Protected Species (EPS).</p> <p><b>Scoped in to the assessment in relation to</b></p>

<sup>4</sup> Oldham R.S., Keeble J., Swan M.J.S & Jeffcote M. (2000), Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155

<sup>5</sup> ARG UK (2010), ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.

<sup>6</sup> Biggs J., Ewald N., Valentini A., Gaboriaud C., Griffiths R.A., Foster J., Wilkinson j., Arnett A., Williams P, and Dunn F (2014), Analytical and methodological development for improved surveillance of the Great Crested Newt.

<sup>7</sup> Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust. Oxford.

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
	and places of shelter.	<b>potential effects on great crested newts.</b>
<p>Otter and water vole</p> <p>County</p>	<p>Species potentially present within waterbodies, ditches and watercourses and associated bankside habitat 100m up and down stream of proposed crossing points. Construction is described in detail in Chapter 3 'The Proposed Development' (<b>DCO Document 6.3</b>). Works are short term (1-2 days at each individual pole) with land take and physical disturbance limited to the Order Limits.</p>	<p>Watercourses and suitable ditches surveyed for habitat suitability and signs of otter and water vole presence along both banks 100m upstream and downstream of proposed crossing points.</p> <p>The water vole survey methodology was in accordance with the Water Vole Mitigation Handbook (Dean et al., 2016<sup>8</sup>). Otter surveys were undertaken in accordance with Chanin P (2003<sup>9</sup>).</p> <p><b>Scoped in to the assessment.</b></p>
<p>Breeding birds (including additional surveys for herons and kingfisher)</p> <p>Local/County</p>	<p>Disturbance and/or displacement during construction or collision risk during operation phases may affect breeding target species (generally considered to be geese and other wildfowl) and all other species of breeding bird.</p> <p>Direct effects during the construction phase would be limited to land within the</p>	<p>A consultation response from the RSPB noted that some agricultural fields may be used for breeding by protected or notable bird species vulnerable to collision, such as lapwing. Additional bird records obtained from RSPB were used in conjunction with field survey results to identify areas of target species breeding activity within at least 200m of the Proposed</p>

<sup>8</sup> Dean, M., Strachan, R., Gow, D. & Andrews, R. (2016). *The Water Vole Mitigation Handbook*. Mammal Society Mitigation Guidance Series

<sup>9</sup> Chanin P (2003) Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10.

English Nature, Peterborough.

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
	<p>the Order Limits.</p> <p>Indirect effects could influence target species or Schedule 1 species over a greater distance. Effects limited by linear and short term nature of construction works at any one location (poles being worked on over 1-2 days each, undergrounding occupying a narrow corridor of activity, and not whole development at the same time).</p>	<p>Development.</p> <p>Breeding Bird Surveys (BBS) were undertaken along the proposed route corridor between March and June 2017. Areas for survey were identified on the basis of the likelihood of target species occurring, primarily breeding waders identified through desk study.</p> <p>Targeted breeding bird surveys comprised three survey visits at selected locations following a simplified version of the Common Bird Census (CBC) and Gilbert et al. 'Bird Monitoring Methods: A manual of techniques for key UK species' RSPB (1998).</p> <p><b>Scoped in to the assessment.</b></p>
<p>Non-breeding (including overwintering) birds</p> <p>Local/County</p>	<p>Disturbance and/or displacement during construction or collision risk during operation phases may affect target species (generally considered to be geese and other wildfowl) and all other species of breeding bird.</p> <p>Direct effects during the construction phase would be limited to the Order Limits.</p> <p>The potential for the operation phase to affect</p>	<p>Vantage point (three locations) and non-breeding walkover/ driven surveys completed between October 2016 and March 2017 in line with Natural England guidance TIN069 (2010) and with reference to SNH (2016) guidance on recommended survey methodologies for overhead lines for birds. The surveys focused on target species generally acknowledged to be vulnerable to collision risk,</p>

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
	birds flying across the Proposed Development extends the potential zone of influence and associated surveys.	such as geese and waders. Additional targeted vantage point surveys for heron flights were undertaken in spring 2017 to gather further evidence of activity levels and potential risk to this species and an identified heronry in the wider area.  Kingfisher surveys were undertaken in August 2017 along sections of the River Perry approximately 100m up and downstream of proposed crossing points.  <b>Scoped in to the assessment.</b>
Aquatic species including fish and white-clawed crayfish  County	Within waterbodies, ditches and watercourses 100m up and down stream of proposed crossing points.	Watercourses and ditches were mapped as part of the Extended Phase 1 habitat survey. As the Proposed Development will not involve any works within watercourses, and poles and construction areas will be set back from bankside habitats, no specific presence/ absence surveys for aquatic surveys were considered necessary to inform the assessment  <b>Scoped out of the assessment other than standard good practice pollution prevention measures for the protection of watercourses to be set out in the draft CEMP (DCO</b>

Table A7.2.1 Baseline Field Surveys and Study Areas		
Ecological Feature / Importance	Zone of Influence	Survey Type, Extent and Methodology
		<b>Document 6.3.2).</b>
Other species including other mammals, invertebrates and invasive non-native species.  Local	The Order Limits are described in detail in Chapter 3 'The Proposed Development' ( <b>DCO Document 6.3</b> ). Works are short term (1-2 days at each individual pole) with land take and physical disturbance limited to the Order Limits.	Potential habitat suitability and presence of notable species including invasive species was noted where observed as part of the Extended Phase 1 habitat survey. Given the relatively restricted footprint of the construction and operational phases of the proposed development within a largely agricultural area, and the fact that waterbodies and watercourses will be avoided and hedgerows will be reinstated, no detailed invertebrate or other species surveys were considered necessary to inform the assessment.  <b>Scoped in to the assessment in relation to standard good practice embedded mitigation and draft CEMP (DCO DOCUMENT 6.3.2).</b>

### Designated Sites

1.2.14 The Multi Agency Geographic Information for the Countryside' (MAGIC<sup>10</sup>), Joint Nature Conservation Committee (JNCC) and Natural England websites were consulted to obtain information on statutory and non-statutory designated sites within a 5km radius of the Proposed Development and identify the presence of any 'Ancient woodland' or 'Priority habitats' within and

<sup>10</sup> <http://www.magic.gov.uk/MagicMap.aspx>



---

immediately adjacent to the Proposed Development. Shropshire's Environmental Network mapping has also been consulted as part of baseline information gathering to help identify potential areas of Priority Habitat 70. Reference has also been made to Ordnance Survey maps of the wider area and online aerial images ([www.google.co.uk/maps](http://www.google.co.uk/maps)) in order to determine any features of nature conservation interest in the wider area.

- 1.2.15 Designated sites such as Sites of Special Scientific Interest (SSSI), Ramsar sites, Special Protection Areas (SPA) and Special Areas of Conservation (SACs) were mapped and described in the Strategic Options Report 2016 (**DCO Document 7.5**).
- 1.2.16 Additional information on County Wildlife Sites and Local Nature Reserves was also provided by Shropshire Wildlife Trust in partnership with Shropshire Council.
- 1.2.17 A component site of the Midland Meres and Mosses Phase 2 Ramsar, Brownhheath Moss SSSI site lies approximately 1.7km north of the Proposed Development, the closest point of the Ramsar to the Proposed Development. The Meres and Mosses of the north-west Midlands form a nationally important series of open water and peatland sites. The Ramsar site supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane *Cicuta virosa* and, elongated sedge *Carex elongata*. Also present are the nationally scarce bryophytes *Dicranum affine* and *Sphagnum pulchrum*. The site also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insects listed for this site including the following endangered species: the moth *Glyphipteryx lathamella*, the caddisfly *Hagenella clathrata* and the sawfly *Trichiosoma vitellinae*. Bird species include passage northern shoveler *Anas Clypeata* and wintering great cormorant *Phalacrocorax carbo carbo*. Great bittern *Botaurus stellaris stellaris* and water rail *Rallus aquaticus*.
- 1.2.18 The following two Sites of Special Scientific Interest (SSSI) lie within 1km of the Proposed Development:



- 
- A section of the Montgomery Canal, lying approximately 840m south of where the route crosses the Canal. The special interest of this section of the Montgomery Canal is in the aquatic features; and
  - Ruewood Pastures lying approximately 220m south-east of the Proposed Development is designated for its grassland plant species.

1.2.19 The following SSSIs are all between 1 and 3km from the Proposed Development.

- Brownheath Moss lying approximately 1.7km north of the Proposed Development is part of the Midlands Meres and Mosses Phase 2 Ramsar area and is important for its fen and carr vegetation communities;
- Sweat Mere and Crose Mere lying approximately 2km north of the Proposed Development is part of the Midlands Meres and Mosses Phase 2 Ramsar area and supports a complex of open water, reedswamp, fen and woodland habitats; and
- Fernhill Pastures lying approximately 2.8km north of the Proposed Development is a series of traditionally managed fen-meadows situated on gently sloping ground alongside the River Perry.

1.2.20 Three Local Wildlife Sites (LWS) lie within 1km of the Proposed Development:

- Moorfields, Loppington LWS lies approximately 90m north of the Proposed Development. The LWS comprises two fields which are good examples of unimproved and marshy grassland supporting areas of semi-improved and unimproved neutral grassland and areas of rush-dominated grassland bounded primarily by ditches and alder trees;
- Ruewood Pools LWS lies approximately 1.22m south of the Proposed Development and comprises an area of damp, unimproved pasture with silted murky pools, surrounded by encroaching alders; and
- Halston Hall heronry LWS lies approximately 750m north of the

Proposed Development and is an area of deciduous woodland containing a heronry on an island within an ornamental lake.

1.2.21 There are no areas of ancient woodland crossed by the Proposed Development. The nearest area of ancient woodland is at Gravenall, approximately 750m to the north of the Order Limits. No trees protected under Tree Preservation Orders (TPOs) lie within or adjacent to the Order Limits.

### 1.3 ISSUES IDENTIFIED

1.3.1 The findings of the desk study and surveys and discussions with stakeholders, identified important or sensitive ecological features which were taken into consideration in the iterative detailed design and assessment process. Features which are unlikely to be significantly affected by the Proposed Development or which are considered sufficiently widespread, unthreatened or resilient to impacts, and hence will remain viable and sustainable, have therefore not been subject to a detailed assessment (and hence have been scoped-out – see Table A7.2.2 below), but where relevant, such features are covered by general good practice measures incorporated within the design.

1.3.2 The following ecological receptors, are considered sensitive and required particular consideration in the design and assessment process:

- Designated sites;
- Notable habitats<sup>11</sup> comprising:
  - watercourses including the Montgomery Canal, Rivers Perry and Roden, and their potential to support protected species, and to act as flyways for geese and other waterfowl;
  - ponds and their potential to support amphibians in particular

---

<sup>11</sup> Defined as Habitats of Principal Importance or priority habitats under Section 41 of the NERC Act (2006)

great crested newts;

- woodlands, mature trees and hedgerows; and
- species-rich grasslands; and

- Protected and notable species<sup>12</sup>, including otters, water voles, bats, great crested newts, reptiles, ████████, Schedule 1 protected bird species and breeding bird species at risk during construction and certain bird species at risk when overwintering, flying across the Proposed Development or breeding in the vicinity.

1.3.3 In accordance with CIEEM guidelines, only ecological features that are considered to be important and potentially significantly affected by the proposed scheme require a detailed assessment as ecological receptors.

1.3.4 Table A7.2.2, which builds on Table A7.2.1 and the baseline surveys as described above, identifies key ecological receptors to be subject to more detailed assessment, i.e. those that are considered to be important at more than a local/site level, and/or potentially significantly affected by the Proposed Development, adopting a precautionary approach where necessary. Ecological receptors have been assigned a level of importance based on the evaluation criteria presented within Table 7.4 (see Chapter 7 ‘Ecology and Biodiversity’ (DCO Document 7.4) supported by professional judgement.

Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
Statutory Designated Sites, Ramsar/European Sites, SSSI, Local Nature Reserves	Internationally and nationally important designated sites lie within 10km but no designated sites are crossed by the Proposed Development.  <b>Scoped in to the assessment.</b>

<sup>12</sup> Defined as Species of Principal Importance or priority species under Section 41 of the NERC Act (2006)

Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
International/National/County levels of importance depending on their designation	Potential effects on Ramsar/European sites are assessed in detail in the Information to Inform a Habitats Regulations Assessment Report ( <b>DCO Document 5.4</b> ).
Non-statutory designated sites County Wildlife Sites, SINCs, Local Wildlife Sites (LWS)	Sites of County and Local importance lie within 1km but none are crossed by the Proposed Development. <b>Scoped in to the assessment.</b>
Habitats including watercourses, ponds, trees and hedgerows Local	The Proposed Development has the potential to lead to direct and indirect habitat loss or damage, in particular relating to limited removal of trees and works near waterbodies and watercourses. However, the majority of affected habitats comprise agricultural land and permanent habitat loss (restricted to land under and around poles) is small overall. <b>Scoped in to the assessment</b> due to potential loss of Priority Habitat listed under S41 of the NERC Act and habitat connectivity only.
Invasive species	Small stands of invasive species are present along the route of the Proposed Development but are not widespread. Movement of machinery and plant associated with the construction phase and excavations have the potential to introduce or cause their spread. <b>Scoped in to the assessment</b> only in relation to good practice mitigation measures contained in the draft CEMP ( <b>DCO Document 6.3.2</b> )..

Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
<p>Amphibians – Great crested newts/species listed in Schedule 41 of the NERC Act 2006</p> <p>County/Local</p>	<p>Where the Order Limits lie within 50m of ponds, great crested newts (if present) are considered potentially at risk from disturbing or damaging activities. At greater distances (i.e. away from ‘core’ terrestrial habitat), the extent and duration of works makes it very unlikely that local populations of this species or individuals would be affected. The majority of habitat loss represents agricultural land including arable fields and improved grassland of low value to foraging individuals. Great crested newts, if present, are less likely to use open arable or grazed improved grassland fields and favour more suitable habitat with better shelter such as field boundary hedgerows, woodland, scrub and ruderal marginal vegetated areas. Direct loss of or damage to such areas near to ponds could result in the loss of suitable places of shelter or direct harm to individual animals where present.</p> <p><b>Scoped in to the assessment.</b></p>
<p>Otter and water vole</p> <p>County</p>	<p>No evidence of otter (such as holts, resting places, spraints etc.) was recorded during baseline surveys along the sections of watercourses crossed by the Proposed Development under current baseline conditions, no direct perceptible impacts upon otters are anticipated However this is a wide ranging species considered likely to move along rivers and the Montgomery Canal and has the potential to be present in the future during the construction phase.</p>

Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
	<p>Limited evidence of water vole presence was confirmed at survey locations along the River Perry and in ditches east of the River Roden.</p> <p>Otters and water voles have the potential to be adversely affected by construction works, for example ditch or river crossings where excavations take place on or near bankside habitat.</p> <p><b>Scoped in to the assessment.</b></p>
Bats County	<p>Transect and automated monitoring along representative sections of the Proposed Development confirmed that the bat species recorded generally favour foraging and commuting routes along hedgerows and in and around woodlands and waterways, with lower activity recorded across open agricultural land, in particular the large arable fields. No tree roosts were confirmed during the surveys however a number of trees with moderate or high bat roost potential as defined in current Bat Conservation Trust Guidance (Collins 2016) were identified within or near the Order Limits.</p> <p>All UK bats and their roosts are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended) and the Habitat Regulations, deeming them European Protected Species (EPS). So far as achievable, the design of the Proposed Development has avoided habitat features likely to be used by bats. All bats recorded during baseline surveys were common and widespread species and overall activity was moderate to low. Bats are,</p>

Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
	assigned a County level of importance, on the basis of their legislative protection <b>Scoped in to the assessment</b> , in relation to the potential for impacts on bat roosts due to tree removal.
Local	Evidence of activity (including active setts, pathways and latrines) was widespread along the surveyed route of the Proposed Development and within the Order Limits. <b>Scoped in to the assessment.</b>
Other species including small mammals (hedgehog and brown hare)	Potentially present within and adjacent to the Order Limits but not considered to be affected by the Proposed Development due to the small extent of works at any individual location, lack of habitat loss, fragmentation or severance effects likely to affect local populations of these species. <b>Scoped out of the assessment.</b>
Reptiles County	The extended Phase 1 habitat survey identified few areas of suitable or high value reptile habitat. The most suitable habitats for reptiles, generally accepted to be connected areas of heathland and marshy grassland are effectively absent. High value suitable and connected habitat in the wider landscape is also limited.  No reptiles were observed during any of the baseline surveys and potentially suitable reptile habitat present within or adjacent to the Order Limits was of relatively limited value in terms of its extent and degree of connectivity to higher value habitat in the wider area

Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
	<p>(Figure 7.10 (<b>DCO Document 6.14</b>)). Local records of reptiles from the desk study were very limited. Whilst it is possible that small numbers of common species of reptile may utilise small areas of suitable habitat within or near the Order Limits on occasion, they are unlikely to support viable populations in isolation. With more suitable habitats available in the wider area, it is considered that land within the Order Limits is of low importance to local reptile populations, and the nature of the Proposed Development will not isolate, fragment or cause the loss of areas of high value reptile habitat.</p> <p>The potential for direct harm to individual reptiles potentially present within the small footprint of construction work at any one works location (mainly individual poles) are readily addressed through standard construction practices set out in the draft Construction Environmental Management Plan (CEMP) (<b>DCO Document 6.3.2</b>).</p> <p><b>Scoped in to the assessment</b> only in relation to good practice mitigation measures contained in the draft CEMP (<b>DCO Document 6.3.2</b>).</p>
Breeding birds Local/County	In the breeding season (generally March-August inclusive) disturbance and/or displacement during construction may affect breeding birds either directly within active working areas or indirectly (for Schedule 1 species) over a greater distance. The potential for effects is limited due to the sequential and linear nature of construction works (with active



Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
	works at any one location being short term and requiring very limited vegetation removal). <b>Scoped in to the assessment.</b>
Non-breeding (overwintering) birds Local/County	In the winter months, construction activities may affect overwintering protected or notable bird species through disturbance and/or displacement. The potential for effects is limited due to the sequential and linear nature of construction works (with active works at any one location being short term and requiring very limited vegetation removal). There is potential for bird collisions (relating to larger species such as geese) with the overhead line when completed. <b>Scoped in to the assessment.</b>
Terrestrial invertebrates Local	The Proposed Development requires a small area of permanent land take within an area dominated by agricultural management practices. There is negligible potential for the Proposed Development to adversely affect local populations of terrestrial invertebrates. <b>Scoped out of the assessment.</b>
Aquatic species including fish, white clawed crayfish and other aquatic invertebrates Local	Construction will not involve any works within watercourses, and poles and construction areas will generally be set back from bankside habitats which may support aquatic species. No effects on populations of aquatic invertebrates are anticipated. <b>Scoped out of the assessment</b> other than standard construction practice pollution prevention measures (forming

Table A7.2.2 –Ecological Receptors Included in the Assessment	
Ecological feature/possible receptor and importance/value in relation to the Proposed Development	Scoped in or out of the Assessment
	part of the draft CEMP ( <b>DCO Document 6.3.2</b> ) for the protection of watercourses and surface waters.

- 1.3.5 In accordance with CIEEM guidelines, only ecological features that are considered to be important and potentially significantly affected by the proposed scheme require a detailed assessment, however non-significant effects may become significant when considered in combination with other projects or other impacts, and this has been addressed in the cumulative assessment (see also Chapter 12 ‘Cumulative Effects’ of the ES (**DCO Document 6.12**)).
- 1.3.6 The Proposed Development has been designed and routed so as to avoid or minimize the potential for adverse ecological effects as far as practical. Together with the standard construction practices as set out in the draft CEMP (**DCO Document 6.3.2**) these have been taken into account when assessing potential effects on ecology.

**1.4 ASSESSMENT OF IMPACTS AND EFFECTS**

- 1.4.1 This section provides an outline of the impacts and effects on identified sensitive receptors, to be discussed fully in the ES.
- 1.4.2 The Proposed Development design incorporates a range of measures to ‘design out’, avoid or minimize the potential for adverse ecological effects and this has been taken into account when assessing potential effects on ecology (but excluding consideration of European designated sites and their qualifying interest features which are separately subject to a Stage 1 ‘screening’ assessment under the provisions of the Habitats Regulations 2017 in the absence of mitigation). These measures include but are not restricted to:

- Routeing and alignment amendments to avoid higher value habitat

features where practicable (such as woodlands, ponds, mature trees, species-rich hedgerows);

- Using existing field gates and farm tracks for construction access wherever possible and minimizing the need for hedgerow removal or ditch crossings. As a result of this, the planned accesses for the proposed development do not require any tree or hedgerow removal;
- Maintaining a minimum 8m stand-off from the banksides of main watercourses, also protecting the species (such as water vole) present in such habitats; and
- Locating temporary laydown areas away from more vulnerable or sensitive habitats such as woodlands, ponds or watercourses, also protecting the species (such as water vole) present in such habitats.

1.4.3 In addition the assessment has assumed the adoption of standard best practice construction measures, set out in the draft CEMP (**DCO Document 6.3.2**) to avoid and minimize potential effects to habitats and species under the supervision of an appointed Project ecologist. This will include but not be restricted to:

- Stand-off or buffer areas around sensitive habitat features or locations of vulnerable species, appropriate timing of construction, and appropriate pollution prevention and control measures;
- Pre-construction update surveys for key species including [REDACTED], and water voles and otters at watercourse crossing points;
- Adherence to current best practice pollution prevention guidance and in line with Environment Agency requirements;
- Tool Box Talks and site briefings for all construction staff; and
- Species specific working method statements to include habitat protection and species Reasonable Avoidance Measures where required.

---

## Construction Effects

### Direct Land Take and Habitat Loss – Permanent and Temporary

#### *Designated Sites and Designated Habitat Features*

- 1.4.4 The Proposed Development is not located within any statutory or non-statutory designated site, and as a result there will be no direct effects on designated and protected habitats from any of the proposed works, including installation of poles, and the overhead line, installation of the 132kV underground cable, undergrounding of existing low voltage overhead lines, and associated temporary works including the creation of laydown areas and accesses. No areas identified as Ancient Woodland or trees covered by Tree Preservation Orders are affected by the Proposed Development. The Order Limits, as described in Chapter 3 'The Proposed Development' (**DCO Document 6.3**), demonstrate the limited extent of the working areas and the Plan of Nature Conservation Sites (**DCO Document 2.6**) illustrates the distance of designated sites from these areas.

#### *Habitats*

- 1.4.5 Direct habitat effects arising from construction would be associated with access and clearance of vegetation to facilitate working, including installation of poles, and the overhead line, installation of the 132kV underground cable between Oswestry Substation and a 132kV terminal structure at Long Wood, undergrounding of existing low voltage overhead lines to ensure safe electrical clearance for the new overhead line and associated temporary works including the creation of laydown areas and accesses.
- 1.4.6 Accesses have been designed to follow existing roadways and field tracks or to pass alongside existing field boundaries on the edge of fields, avoiding the requirement for new track construction and minimising hedgerow crossings by utilising existing gateways and gaps. As a result, the anticipated habitat loss associated with accesses is considered to be minimal, affecting narrow widths of arable or improved agricultural grassland where not following

---

existing surfaced tracks and requiring negligible hedgerow loss. Habitat loss associated with accesses and laydown areas would be highly localized and temporary with the affected areas of agricultural land reinstated upon completion of the works.

- 1.4.7 The construction compound for the Proposed Development would be located at the existing SP Manweb depot at Maesbury Road, Oswestry Industrial Estate, comprising hardstanding and existing offices and other facilities with negligible habitat features present. As a result, this element of the construction phase is not considered further here.
- 1.4.8 Works within the existing Wem Substation including the installation of a new 132kV to 33kV transformer ('grid transformer') would affect a small area of species-poor improved grassland contained within the existing operational site.
- 1.4.9 The majority of the habitats crossed by the overhead line, poles and undergrounded cables (which form the majority of the Proposed Development) comprise arable and improved species-poor grassland fields of low ecological value. Extended Phase 1 habitat survey and botanical surveys did not record any areas containing arable weed species which would have been considered notable habitat or other notable vegetation communities apart from those already identified in the nearby Moorfield LWS and Ruewood Pastures SSSI. The agricultural fields were largely cultivated right up to their margins, and vegetation along hedgerow bases and uncultivated field margins were relatively species-poor. The locations of scattered specimens of meadow rue noted during botanical survey, along with and suitable damp ditch habitat in the vicinity, have been recorded in order to inform suitable avoidance measures during the construction phase which will be set out in the draft CEMP (**DCO Document 6.3.2**).
- 1.4.10 The Proposed Development will maintain a stand-off buffer of approximately 8m along main watercourses, however works near crossing points at the Montgomery Canal, River Perry and River Roden will be required. No ponds

---

or marginal aquatic habitat will be lost to the Proposed Development; however works will be required in relatively close proximity to several waterbodies and ditches.

- 1.4.11 Typically access is required during construction for an excavator (JCB and/or tracked 360 degree excavator) JCB or similar agricultural 'loader', 4x4 lorry and 4x4 pick-ups. During the stringing phase of the works, there is also a need for access for a single tractor, tensioner and MEWP (mobile elevated working platform) and cable trailers to gain access to several locations along the line. Such equipment is similar in scale to agricultural machinery in general use.
- 1.4.12 The installation of wood poles requires excavation to allow buried timber foundation blocks to be fitted approximately 500mm below ground level. In excavating foundation holes, the minimum amount of soil is disturbed to take advantage of the load bearing value of the surrounding ground, thereby reducing the area of habitat disturbance.
- 1.4.13 These works are sequential and vehicles and plant will move from one location to the next. As a result the degree of habitat disruption at any individual location is limited both in extent and duration. Works would mainly require stripping back of ground vegetation (mainly affecting arable crop, agricultural grassland, but also potentially affecting areas around trees and hedgerow bases, marginal vegetation near watercourses or waterbodies and ruderal vegetation). Some limited removal or cutting back of individual trees or scrub may also be required. No hedgerow removal would be required, however short sections may be lifted and replaced (as a single operation over a day) to allow pole construction at specific locations where other constraints make this difficult to avoid.
- 1.4.14 The 132kV underground cable would typically be laid at a depth of 1m below ground level in a trench approximately 1m wide. A 7m wide working area for the cable installation would be required. Topsoil excavated from the cable trench would be segregated and then used to complete the backfilling. The

lower voltage underground cables would typically be laid at a depth of 0.8m below ground level in a trench approximately 0.6m wide, but would also require a 7m wide working area. The habitats affected by the proposed undergrounding sections largely comprise arable and improved grassland fields, with a linear stretch of poor semi-improved grassland forming a corridor through broadleaved woodland west of the A5 leading to the SP Manweb depot at Maesbury Road, Oswestry.

- 1.4.15 Limited disruption to vegetation will occur during the dismantling and removal of the section of lower voltage overhead line that has been diverted by undergrounding. All conductor, fittings, wood poles, stay wires etc. would be dismantled and removed from site to the main construction compound. Localised filling may be required to fill foundation holes using suitable imported material. Topsoil would also be imported to reinstate the ground locally at each pole location, allowing vegetation to re-establish.
- 1.4.16 Areas of ground disturbed by the construction works would be reinstated and some sections of the construction may be reinstated earlier than the final construction completion.
- 1.4.17 The approximate areas of permanent habitat loss associated with the Proposed Development are summarised in Table A7.2.3 (also see Chapter 11 'Land Use and Agriculture' (**DCO Document 6.11**)). This indicates that the majority (c.96%) of habitat affected by the Proposed Development comprises arable and improved grassland under agricultural management. This assumes that all habitats within the Order Limits) would be directly affected during construction, which is a highly conservative assumption as much of the land shown is in fact crossed only by the overhead line between poles, and does not required ground works.

Table 7.2.3 – Approximate area of habitat loss within the Order Limits		
Habitat type	Habitats present and	Approximate area of

	approximate extent within the Order Limits, (not all of which would be affected )	permanent land take/habitat loss
Arable	34.5ha (37%)	<1.52ha
Improved grassland	56ha (60%)	
Semi improved grassland	1.5ha (1%)	Negligible
Hedgerow	Negligible	Negligible
Woodland/Trees/Scrub	1ha (1%)	<0.5ha
Ponds	Negligible	Negligible

1.4.18 Approximately 93ha of land lies within the Order Limits, of which only a very small proportion would be affected in any way by construction works. This land is dominated by low ecological value agricultural land, with negligible hedgerow loss. Limited tree, scrub and woodland removal is required for the Proposed Development, estimated at this stage to comprise less than 0.5ha in total given the relatively small footprint of individual pole construction locations, narrow width of underground trenching works (for cable installation to Oswestry Substation and low voltage line diversions), the restricted extents of the Order Limits and the fact that undisturbed habitat would be maintained around, and often between, construction areas.

1.4.19 Apart from the land take under the poles themselves, all other habitat disturbance during the construction phase would be temporary with all disturbed land reinstated on completion of works.

1.4.20 The Proposed Development would result in a very small area of direct permanent land take required for individual poles and stays and additional



---

infrastructure at Wem substation, requiring approximately less than 2ha of land, of which most is made up of managed arable land and improved grassland habitat of relatively low ecological value. Both permanent and temporary land take occurs within habitats that are considered to be widespread throughout this part of Shropshire, with works undertaken within a relatively short timeframe at any individual location (described in Chapter 3 'The Proposed Development' (**DCO Document 6.3**)).

- 1.4.21 The small ground footprint required for individual poles, once in place (the poles themselves being approximately 300mm by 450mm), will result in negligible habitat loss or fragmentation or severance effects. Effects on agricultural land (arable and grassland habitats) are therefore considered to be of low magnitude, constituting a minor adverse effect and not significant.
- 1.4.22 It is estimated that approximately 42 trees along the 21.3km length of the overhead line alignment would need to be felled to facilitate the Proposed Development. In addition a further seven trees have been identified for 'felling as low as reasonably practicable' based on current dimensions and/or estimated growth over the next three years. Such pruning is necessary to prevent the risk of trees or large branches falling on to the overhead line once operational. Of these, four veteran trees are likely to be affected. In addition, three trees are identified for crown or branch reduction, and 19 other trees would require some work subject to necessary safety clearances to accommodate the line. Slight variations in pole positions can alter the extent of required tree works, and as such, these figures represent the best judgement of likely tree works at this stage in the project. The assessment of these likely losses is based on the Proposed Development as presented in this ES, along with information shown on Figure 6.9 'Location of Anticipated Tree Works' (**DCO Document 6.14**) from the ADAS Tree Survey carried out in April 2018, which establishes the vegetation clearances required to ensure adequate safety clearances between the Proposed Development and existing vegetation within the Order Limits Further information on tree management

---

required to facilitate the Proposed Development is provided within Chapter 3 'The Proposed Development' (**DCO Document 6.3**) and Appendix 7.4 'Arboricultural Survey' (**DCO Document 6.7.4**). Effects on trees and woodlands along the whole of the Proposed Development are considered to be of low magnitude, constituting a minor adverse effect at a local geographic scale, and not significant at anything more than a local scale.

- 1.4.23 The design of the Proposed Development, including the routeing of temporary accesses has avoided any requirement for hedgerow removal or loss. Positioning of certain poles adjacent to hedgerows may require temporary lifting of short sections of hedgerow (approximately 3-5m long) which would be replaced (via a single lift-replace process) on completion of work at that location, generally on the same day. This approach retains the existing hedgerow feature and its associated root/soil associations and seed bank at such locations, thereby minimising the potential for disturbance and habitat loss effects as well as maintaining the soil-root association and local soil biodiversity. Short sections of hedgerow at 22 locations along the alignment would need to be lifted and replaced to accommodate double wood poles at certain locations. The majority of hedgerows involved are species poor, with only one of these affected hedgerows identified from survey as being species rich. The species rich hedgerows support a greater diversity of species but those affected do not meet the ecological criteria for 'importance' as defined in The Hedgerows Regulations 1997. However, all 22 hedgerows are classed as important in terms of the historic environment, i.e., boundaries which meet the archaeological criteria of The Hedgerow Regulations 1997, as identified in Chapter 8 'Historic Environment' (**DCO Document 6.8**). Hedgerow effects are therefore considered to be negligible (and both reversible and temporary). Construction near hedgerows will follow the draft CEMP (**DCO Document 6.3.2**) method statement for the protection of retained trees and hedgerows in line with BS 5837: *Trees in Relation to Design, Demolition and Construction – Recommendations (2012)*, which will include a methodology for the lift-replace process.

- 
- 1.4.24 Once construction and land reinstatement is complete, there will be no net loss of hedgerow habitat, or fragmentation or loss of connectivity for the hedgerow network in the wider landscape. Hedgerows affected (for example as a result of localized cutting back or where short sections have been subject to the list-replace process) during works would experience negligible adverse effects on completion with no overall loss. Effects on hedgerows are therefore considered to be of low magnitude, constituting a minor adverse effect at worst and not significant.
- 1.4.25 Approximately 34 ponds lie within 50m of the Order Limits, some of which are dry for much of the year. A number of ponds in the vicinity of the Proposed Development were subject to habitat survey, some of which lie outside the survey corridor but were assessed in the context of their relationship to habitat corridors and other ponds in the locality. Although the detailed design of the Proposed Development has sought to avoid proximity to ponds as far as practical, some poles and accesses are unavoidably located in close proximity to ponds. No ponds will be lost or directly affected by the Proposed Development and there will be no works within ponds.
- 1.4.26 The design, including routeing of the underground sections and micro-siting pole positions, has sought to maintain a suitable distance from all waterbodies to protect aquatic and marginal habitats. Works that are unavoidable in close proximity to ponds will be controlled through specific measures within the draft CEMP (**DCO Document 6.3.2**), to ensure appropriate pollution prevention measures and physical safeguards are in place. This will include maintaining a stand-off zone around the pond margins, and ensuring works are undertaken following appropriate method statements. It is considered that the design and alignment of the Proposed Development will have negligible magnitude effects on pond habitats.
- 1.4.27 Direct effects on all habitats are therefore considered to be of negligible or low magnitude, constituting minor adverse effects on receptors of Local value and are not significant. With avoidance and protection measures as set out

---

in the Construction Report (**DCO Document 7.2**) and draft CEMP (**DCO Document 6.3.2**), the scale and nature of impacts are not considered to have any potential for significant effects on protected habitat or habitats identified as being of Principal Importance.

### Indirect Habitat Damage or Alteration to Habitats

#### *Designated Sites*

- 1.4.28 The construction phase will proceed in a linear and sequential manner within a restricted footprint – such that construction activity and associated disturbance will be localised at specific locations/sections along the route at any one time. The Order Limits, as described in Chapter 3 ‘The Proposed Development’, (**DCO Document 6.3.2**) demonstrate the limited extent of the working areas and Figure 7.2 (**DCO Document 6.14**) illustrates the distance of designated sites from these.
- 1.4.29 The distance of the Proposed Development from designated sites, including the European sites, means that there is no potential for visual, noise or other form of construction-related indirect disturbance to occur, given the limited scale and duration of works at any location, type of machinery required and sequential nature of construction along the linear route.
- 1.4.30 There are no direct functional ecological links between the construction area required for the Proposed Development and any designated site (including European sites). The separation distances from designated sites, when considered in relation to the relatively small footprint of construction at any location, means that there are no likely potential pathways for effect (see also Chapter 9 ‘Flood Risk, Water Quality and Water Resources’ (**DCO Document 6.9**)).
- 1.4.31 The potential for significant direct and indirect effects on the European designated sites (including the Midlands Meres and Mosses Phase 1 and 2 Ramsars) or their component SSSIs is addressed in detail in the No Significant Effects Report (NSER) (**DCO Document 5.4**). The Proposed

---

Development does not cross core non-designated habitat for notable bird species associated with the Ramsar Site (namely northern shoveler, great cormorant, great bittern and water rail) and habitats associated with these species are not affected.

- 1.4.32 Natural England (**DCO Document 5.4**) has stated that it does not consider that there would be any effects on European Sites (a definition which includes the Ramsar sites) from the Proposed Development.
- 1.4.33 The screening assessment undertaken for the NSER, including consultations with nature conservation organisations, concludes that the Proposed Development will have no likely significant effects on any European Sites or their qualifying interest features, even when assessed in the absence of mitigation.

*Changes to surface or ground water*

- 1.4.34 No groundwater effects will arise from the excavations, and there will be no discernible effects on local hydrology. Any surface water effects are considered to be temporary and highly localized (see Chapter 9 'Flood Risk, Water Quality and Water Resources' (**DCO Document 6.9**)).
- 1.4.35 Excavations required for undergrounding and pole erection would only have the potential to affect local surface water drainage only in the immediate vicinity of works and for a short period of time only at any individual location.
- 1.4.36 Brownheath Moss SSSI is 1.7km from the Order Limits and is the closest component site within the Midlands Meres and Mosses Phase 2 Ramsar (European Site) to the Proposed Development. By virtue of their separation distances, relative elevations and drainage patterns and static botanical qualifying interests, the Midlands Meres and Mosses Ramsar sites, including Brownheath Moss, are not hydrologically linked with or dependent upon the habitats crossed by the Proposed Development.
- 1.4.37 Due to the nature of the Proposed Development (requiring limited excavations for undergrounding and pole erection, and negligible generation of

---

emissions), the risk of pollution events, either directly or indirectly, impacting designated sites is very small, especially given their distance from the construction areas (320m for Ruewood Pastures, over 1.7km from Brownheath Moss SSSI at its nearest point). Only the Montgomery Canal provides a direct potential pathway to the SSSI/SAC component section of the canal lying south of the Proposed Development, following a direct path along the route of the canal. This SAC, lying mainly on the Welsh side of the border, is designated for floating water-plantain *Luronium natans* which is noted in the Shropshire Biodiversity Action Plan as,

*'being previously found, rarely, in the Montgomery Canal on the English side of the Welsh border but has not been recorded there since 1994, when its distribution appears to have diminished to one site only (Aston Locks SSSI)'.*

- 1.4.38 There is very limited scope for construction-generated runoff due to the small footprint and short term duration of works around poles in the vicinity of designated sites. Standard good practice construction methods and pollution prevention measures form an integral part of the design of the Proposed Development, with such measures considered to be realistic and achievable given the scale, nature and location of the construction works. These measures are presented in the draft CEMP (**DCO Document 6.3.2**).
- 1.4.39 By virtue of their separation distances and static botanical qualifying interests, the nearest designated sites, Ruewood Pasture SSSI, Moorfield LWS, and Ruewood Pool LWS are not considered to be ecologically or hydrologically linked to the habitats crossed by the Proposed Development. The closest designated sites, namely Ruewood Pasture SSSI and Moorfield LWS are notified for their botanical and habitat interests only, and the valued botanical features for which these sites are designated were not found (during the baseline botanical survey) to be present within or adjacent to the Order Limits. Effects on any statutory designated site will therefore be inconsequential. Specific mitigation of potential effects on statutory designated sites, including

---

European Protected Sites, is therefore unnecessary; however the standard pollution control measures implemented under the draft CEMP (**DCO Document 6.3.2**) will naturally further reduce any potential for impacts on such sites.

- 1.4.40 Indirect effects on designated sites are therefore considered to be negligible and not significant.
- 1.4.41 Several watercourse crossings are required, including of the River Perry and the Montgomery Canal, along with small ditches which eventually drain into the larger watercourses. These crossings will require works on the banks either side, but these are limited in both extent and duration at all such locations. Elsewhere, construction works will maintain a buffer of at least 8m from main watercourses. The Montgomery Canal Aston Locks Keepers Bridge SSSI lies south of the point at which the Proposed Development crosses the Canal. The proposed crossing does not involve any in-canal works, with the overhead line spanning the canal at height with supporting poles located on land either side. A single pole (shown on Figure 1.2 (**DCO Document 6.14**)) is located approximately 9m from the east bank of the Canal, within a line of trees. There will be no in-canal works. All works will be set back at least 8m from canal banks. Pollution prevention and specific canal protection measures (set out in the draft CEMP (**DCO Document 6.3.2**) and agreed with the Canal and Rivers Trust as appropriate) will protect the waterway and its associated species from indirect effects during construction in the vicinity of the Canal. Taking into account the limited footprint and short duration of works on the ground in the vicinity of the Canal, the potential for adverse impacts on the Canal and indirect downstream effects is assessed as low magnitude and highly unlikely to occur.
- 1.4.42 The draft CEMP (**DCO Document 6.3.2**) includes Method Statements for working in proximity to watercourses as part of overall standard pollution prevention and control measures and in line with Environment Agency requirements as applicable.



- 
- 1.4.43 The equipment required during construction (much of which is not dissimilar in scale to agricultural machinery and plant) and restricted footprint of works within the Order Limits will result in small scale ground disturbance at excavation points along the cable and overhead line route, with the potential for runoff from exposed soils therefore very limited and considerably smaller in extent than agricultural operations in the wider area such as ploughing and cultivation across large fields.
- 1.4.44 Construction activities for the Proposed Development (Chapter 3 'The Proposed Development' (**DCO Document 6.3.**)), involve restricted small working areas around poles, use of existing farm tracks and hedgerow gaps for the accesses and will be undertaken within a relatively short time frame of 12 months, where potentially disturbing activities at individual poles will be completed within approximately 1-2 days.
- 1.4.45 Indirect effects on habitats both within and adjacent to the Order Limits are therefore assessed to be highly localised, temporary and of very short duration at each pole location and at undergrounding locations, and hence of low magnitude (at worst minor adverse) and not significant.
- 1.4.46 Such effects would mainly affect arable or agricultural grasslands of low ecological value. Scattered areas of higher value habitats adjoining the Order Limits, such as woodlands, ponds, ditches and watercourses may experience temporary dust and ground disturbance from vehicles and machinery and surface water runoff from land cleared for pole excavations, temporary laydown areas and compounds. Dust and runoff impacts would however be controlled and minimised through the draft CEMP (**DCO Document 6.3.2**), standard good practice construction measures, buffer zones around surface water features and root protection zones around trees. As a result, habitats adjacent to the Order Limits are highly unlikely to experience discernible indirect effects other than very short term disturbance, likely to be similar in scale to normal agricultural activities in the area.
- 1.4.47 Indirect effects on all habitats are therefore considered to be of negligible or



---

low magnitude on receptors of Local value and are not significant.

#### *Introduction of spread of non-native species*

- 1.3.7 The baseline habitat and botanical surveys identified very few locations where invasive plant species<sup>13</sup> were established within or adjacent to the Order Limits, limited to two small stands of Japanese knotweed *Fallopia japonica* along roadside verges. No invasive species were identified within or adjacent to Order Limits during surveys. There is no direct potential for construction activities to introduce or spread non-native species, and indirect pathways are restricted to waterways or transport route are considered only as worst cases. Hence the potential for the inadvertent spread of such species during construction works is considered unlikely and restricted to the immediate vicinity of working areas and accesses.
- 1.3.8 Local ditches and watercourses are considered unlikely to provide potential pathways to local ecological receptors such as the Montgomery Canal Aston Lock Keepers Cottage SSSI, Ruewood Pastures SSSI and Moorfields LWS due to the absence of invasive species within the Order limits where works will take place. The draft CEMP (**DCO Document 6.3.2**) includes biosecurity measures as a precautionary measure to prevent the inadvertent introduction or spread of such species, including requirements for pre-construction checks for invasive species within or near working areas, checking and cleaning vehicles and machinery before leaving construction working areas and maintaining buffer or exclusion zones around watercourses.
- 1.3.9 With such standard measures in place, the risk of the introduction or spread of non-native invasive species is considered very low and highly unlikely, and the potential for adverse effects on habitats as a result is assessed to be negligible magnitude and not significant.

#### **Direct Harm or Disturbance to, Indirect Disturbance to or Displacement of Species**

---

<sup>13</sup> Listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)

- 1.4.48 Consideration has been given to the potential for disturbance or harm to individuals of protected or notable species during construction works may occur should these be present within working areas during construction. This includes legally protected species and species of Principal Importance listed under Section 41 of the Natural Environment and Rural Communities Act 2006 as referenced in the National Planning Policy Framework (NPPF) and species of local importance identified in the Shropshire Biodiversity Action Plan (SBAP).
- 1.4.49 Species identified from desk study and baseline ecological surveys (Appendices 7.2 - 7.9) (**DCO Document 6.7.2 - 6.7.9**) and scoped in to the assessment (Table 7.6) include:
- Great crested newts and other amphibians;
  - Water vole and otter;
  - Bats;
  - ██████████; and
  - Birds (breeding during the nesting season, and overwintering).
- 1.4.50 Other species potentially present but not considered likely to be adversely affected and therefore scoped out of the detailed assessment in Table 7.6 (see also Appendix 7.2) (**DCO Document 6.7.2**) include other mammals such as hedgehog and brown hares, reptiles, aquatic invertebrate species associated with watercourses, and terrestrial invertebrates.
- 1.4.51 No population level effects on any species considered to occur due to the restricted working area, low level of land required for the Proposed Development, and absence of habitat severance or fragmentation. Habitats within the Order Limits are mainly of low ecological value (arable or improved grassland fields) or represent relatively small extents of higher value habitat types commonly present in the wider area. Hence the construction footprint would not affect sufficient areas of habitat to present any risk to the continued

viability of a local population of any species. Similarly the confined nature of the working area and widespread availability of similar and higher quality habitat for species in the vicinity means that construction activity would not cause displacement or disturbance effects that could have discernible adverse effects on the local population of any species.

*Great crested newts and other amphibians*

- 1.4.52 A network of ponds lies along and around the Order Limits as described in Appendix 7.6 (**DCO Document 6.7.6**) and illustrated on Figure 7.2 (**DCO Document 6.14**). These ponds support common amphibian species including common frog and toad, a priority species under Section 41 of the NERC Act 2006.
- 1.4.53 Presence/absence surveys for great crested newts undertaken in 2017 and 2018 confirmed that this European protected species is present in a number of ponds within the Order Limits and its surroundings.
- 1.4.54 The construction phase may result in small extents of localised habitat loss in proximity to ponds and disturbance to nearby terrestrial habitat used by great crested newts (and other amphibians) for foraging, commuting or overwintering. No ponds will be directly affected by the Proposed Development and hence there is no risk of direct effects on waterbodies used by great crested newts or other amphibians.
- 1.4.55 The extent of suitable terrestrial habitat for great crested newts is largely confined to the areas around ponds, along hedgerow bases, in scrub and woodland and riparian habitat along ditches and watercourses. Much of the habitat crossed by the Proposed Development is of low suitability for great crested newts and other amphibians, comprising arable fields or grazed improved grassland with limited opportunities for foraging or refuge. The extent of suitable habitat directly affected by construction activity, and hence where individual animals, if present, may be at risk from direct harm or disturbance, is therefore considered to be very limited.

- 1.4.56 No ponds will be directly affected and will be protected with the implementation of standard pollution prevention and control measures in the draft CEMP (**DCO Document 6.3.2**) which is also applicable to ditches and other connecting features, thereby safeguarding aquatic habitat potentially used by amphibians from indirect effects.
- 1.4.57 The draft CEMP (**DCO Document 6.3.2**) includes species protection measures for amphibians including great crested newts and construction works within 50m of ponds (and affecting 'core' habitat). Specific measures will be employed to protect great crested newts and ensure the continued favourable conservation status of the local population. This will either take the form of a detailed Reasonable Avoidance Measures Method Statement (RAMS) and supervision by a licensed ecologist during works in proximity to ponds and core habitat, or may require works at specific locations to be undertaken under a European Protected Species Low Impact Class Licence (LICL) supported by a detailed Method Statement, or other applicable form of licensing which may be in force at the time, should the project be consented. It is considered that these measures are readily achievable and can be implemented to ensure the protection of individuals and maintain the favourable conservation status of the local population(s).
- 1.4.58 Given the scale and nature of the works, with activities at any one location of short duration, within a small footprint and largely in low suitability habitat, and with suitable protection and avoidance measures contained within the draft CEMP (**DCO Document 6.3.2**) and enacted under licence where required, the effects on local amphibian populations or any individuals potentially present is considered to be negligible and not significant.

*Otter and water vole*

- 1.4.59 Otter and water vole surveys were conducted up and down stream of proposed crossing points of watercourses and ditches, where water was present. Signs of presence were also searched for around ponds along the survey corridor (see Appendix 7.8 (**DCO Document 6.7.8**)). No evidence of

---

otter was recorded, however it is considered this species is likely to be present in the area and to move along the main watercourses as part of wider territories.

- 1.4.60 Water vole presence was recorded at the River Perry and along ditches east of the River Roden.
- 1.4.61 Where the proposed overhead line crosses watercourses, including the River Perry and the Montgomery Canal, the conductors will be strung across without the need to access the water or banks. To enable conductor stringing, a pilot wire will be fired across from one bank to the other, with conductors subsequently pulled over under tension. The conductors will not touch the water during this operation.
- 1.4.62 No culverting or watercourse re-alignment or other intrusive bankside works are required and construction (including accesses, laydown areas and compounds) will maintain a stand-off of 8m from main watercourse banksides, thereby protecting both areas of confirmed presence and other sections considered potentially suitable for these species, but where presence was not confirmed. This and other standard good practice construction measures to protect individual animals will be included in the draft CEMP, including the requirement that construction sites and access roads will be left unlit between dusk and dawn and that any pits left open overnight will be securely fenced or fitted with escape planks.
- 1.4.63 There will be negligible effects on otters resulting from construction.
- 1.4.64 Pre-construction surveys will be undertaken to identify and update information on water vole presence within 50m of Order Limits, and if found to be present and potentially affected by works, suitable avoidance, protection or mitigation measures will be set in place before works commence at such locations, including micrositing or working under a water vole licence issued by Natural England (or other form of consent applicable at the time) where required.

### *Bats*

- 
- 1.4.65 Bat activity transects undertaken at representative locations along the Proposed Development did not suggest the presence of any roosts in close proximity to the Order Limits (Appendix 7.7) (**DCO Document 6.7.7**)).
- 1.4.66 Bat activity levels overall were generally low or occasionally moderate and reflected the open, largely arable/improved grassland habitats crossed by the Proposed Development. As would be expected, bat activity was higher in the vicinity of woodlands, along watercourses and where the hedgerow network provided commuting routes and connected suitable foraging and roosting habitats in the wider area. Overall much of the surveyed areas were considered to be of low value for foraging or roosting, comprising exposed open fields often lacking trees suitable for roosting, with more valuable habitat confined to the hedgerow/tree-lined margins where tree and hedgerows provide habitat links to woodlands in the wider landscape and where clusters of ponds, trees and woodland were well connected with potential roost locations such as farm complexes and other potentially suitable roost structures. Areas of higher value to bats were also considered to be along the watercourse corridors of the River Perry and Montgomery Canal,
- 1.4.67 Bat species recorded during surveys comprised mainly soprano pipistrelle *Pipistrellus pygmaeus* common pipistrelle *Pipistrellus pipistrellus*, with *noctule*, *myotis*, and *Nyctalus* species also recorded. The most commonly recorded species was soprano pipistrelle (over 60% of all activity).
- 1.4.68 Effects on bat commuting and foraging habitats are considered to be negligible, with minimal loss of suitable foraging habitat (primarily small areas of arable or grassland pasture) and negligible effects on bat commuting routes. Where short sections of hedgerow need to be lifted and replaced (generally same day operation), the small lengths involved (approximately 3-5m) would be easily crossed by bats and would not represent a barrier to flight lines or connectivity in the landscape.
- 1.4.69 Noise and lighting generation during the construction period is considered to have negligible effects on foraging opportunities for bats or their commuting

---

routes. Core working hours will be between 07.30 - 18.00 Monday-Friday and 0800 - 13.00 Saturday. Some activities may be carried outside of these times for exceptional circumstances, for example scaffold netting erection across the railway, which would however be a short duration activity at a single location and not considered likely to have any discernible effects on local bat populations.

- 1.4.70 The Proposed Development has avoided affecting trees as far as possible through a process of iterative design and alignment. The route passes through a relatively open landscape with scattered trees, treelines and small woodland copses identified along the surveyed corridor within areas dominated by arable and improved grassland fields under agricultural management. As a result, there will be relatively few trees directly affected by the construction of the Proposed Development taking into consideration its 21km length, but some tree removal or pruning to accommodate the Proposed Development will be required as described in paragraph 1.4.22.
- 1.4.71 Trees within 25m either side of the overhead line route (and hence having potential to be removed or cut back to facilitate works) were assessed for their potential to support bat roosts. The majority of trees affected are of negligible or low bat roost potential, and all trees identified as having low roost potential will be 'soft felled' by a qualified arborist as a precautionary measure. Some trees however have been identified as having moderate or high roost potential (see Appendix 7.7 (**DCO Document 6.7.7**)), requiring the possible presence of a roost to be confirmed before any works affecting them are undertaken.
- 1.4.72 As set out in the draft CEMP (**DCO Document 6.3.2**) no moderate or high bat roost potential trees will be removed without the likely presence/absence of bats being first confirmed through either aerial inspection surveys or emergence/re-entry surveys during the appropriate season. Where a roost is confirmed, efforts will be made to retain and protect the tree and avoid its removal through micrositing. If removal is unavoidable, no works will be undertaken on the tree unless a European Protected Species derogation



---

Licence issued by Natural England (or licensing applicable at the time) is in place. Such licences can only be applied for once a DCO has been granted.

- 1.4.73 It is considered that these measures are readily achievable and can be implemented to ensure the protection of individuals and maintain the favourable conservation status of the local population(s). As a result, effects on bats are assessed as low magnitude, and minor adverse and not significant.

████████

- 1.4.74 ██████████ are present along the survey corridor and a number of active and currently inactive setts were located during surveys (Confidential ██████████ Appendix 7.9) (DCO Document 6.7.9). Several setts lie in close proximity to the Order Limits and working areas and specific construction measures will be required to safeguard setts and ensure compliance with the legislation. These could include micrositing of poles, or working under a ██████████ licence issued by Natural England if necessary. However, ██████████ are common and widespread in Shropshire and the Proposed Development will have no discernible effects on local population levels.

- 1.4.75 Much of the habitat crossed by the Proposed Development comprises arable fields of lesser value to foraging ██████████, and they are more likely to use hedgerow, woodland and watercourse margins, and grassland pastures. The extent of temporary and permanent habitat loss during the construction phase will have negligible effect on the availability of foraging resources for ██████████. Similarly the narrow working corridor and sequential nature of construction activities means that ██████████ present in the area will experience very low levels of disturbance for short periods of time only. Indirect effects will be avoided through implementation of the draft CEMP (DCO Document 6.3.2) and a specific working method statement will be in place to ensure no disturbance to ██████████ and the protection of setts or suitable measures during construction where setts lie in close proximity (within approximately 50m) of working areas. Pre-construction surveys will be undertaken to identify any



---

new sett construction [REDACTED] presence within 50m of working areas, and if found to be present, suitable avoidance, protection or other measures will be set in place before works commence at such locations.

- 1.4.76 No significant adverse effects are likely during the construction phase either on local [REDACTED] populations or individuals that may be locally present during construction works with these measures in place. Effects on [REDACTED] are assessed as low and not significant.

#### *Breeding Birds*

- 1.4.77 Breeding bird surveys were undertaken as part of baseline ecological surveys (Appendix 7.5) (**DCO Document 6.7.5**), and ornithological records were obtained from the RSPB and BTO to identify possible areas of sensitivity for target bird species (such as Schedule 1 species, species considered vulnerable to disturbance during the breeding season). Overall the route of the Proposed Development does not constitute a sensitive area for breeding birds. Small numbers (1-2 pairs) of lapwing were observed attempting to breed in a small number of the numerous large open fields present across the survey area, however during the survey period in 2017, agricultural management practices and ploughing of fields meant that little or no successful breeding was noted.
- 1.4.78 During the construction phase, the potential for disturbance/ displacement effects on target species of birds were considered. Breeding birds may be temporarily displaced or directly affected by the construction activities if works are carried out during the breeding season (generally March-August inclusive), but this risk can be addressed and avoided through appropriate timing of construction, or pre-works nest checks by an ecologist and associated avoidance measures if required. This forms part of the draft CEMP (**DCO Document 6.3.2**) which also includes measures to protect breeding birds and the habitats they utilise. The detailed design has also avoided more sensitive locations where practical and has sought to minimise habitat loss for breeding birds overall through the design.

1.4.79 Construction effects are therefore considered to be restricted to individuals or small numbers of breeding pairs where these are present within the Order Limits and depending on timing of works (i.e. there is potential for effect only if works are undertaken in the breeding season). With the implementation of the CEMP, construction works are anticipated to have low/negligible potential for effects on breeding birds of any species and effects are considered to be not significant on all bird species.

*Overwintering (non-breeding birds)*

1.4.80 Overwintering bird surveys were undertaken (Appendix 7.5) (**DCO Document 6.7.5**) as part of baseline ecological surveys, and ornithological records were obtained from the RSPB and BTO to identify possible areas of sensitivity for target bird species (such as Schedule 1 species, and/or species considered vulnerable to collision risk). The information gained showed that the Proposed Development did not constitute a sensitive area for wintering birds.

1.4.81 Regular grey heron flights were recorded in winter passing north-south and intersecting the Order Limits. Flights were however all recorded above the height of the proposed overhead line. Few intersecting flights were recorded in the spring/early summer, suggesting that grey heron movements change seasonally in the area, and it is likely that herons forage close to breeding sites in those seasons.

1.4.82 The notable bird species associated with the Midlands Meres and Mosses Ramsar Phase 2, namely northern shoveler, great cormorant, great bittern and water rail (Appendix 7.2) (**DCO Document 6.7.2**), are all dependent on wetland habitats found within the European Site boundaries and are highly unlikely to regularly utilise any of the land area crossed by the Proposed Development or associated small watercourses. This is supported by the results of wintering bird surveys (Appendix 7.5) (**DCO Document 6.7.5**) and no concerns over such species were raised through consultation. Significant construction related disturbance of these species can therefore be precluded.

- 
- 1.4.83 Construction effects are considered to be restricted to low numbers of overwintering species, where such individuals are present within the Order Limits and depending on the timing of works. Construction works are anticipated to have low/negligible potential for effects on bird species outside the breeding season.

#### Construction Effects Summary

- 1.4.84 No designated sites would be directly affected. By virtue of their separation distances and static botanical qualifying interests, the nearest designated sites, comprising Brownheath Moss SSSI (a component site of the Midlands Meres and Mosses Phase 2 Ramsar), Ruewood Pasture SSSI, Montgomery Canal SSSI, Moorfield LWS, and Ruewood Pools LWS, were not considered to be ecologically or hydrologically linked to the habitats crossed by the Proposed Development. The closest designated sites, namely Ruewood Pasture SSSI and Moorfield LWS are notified for their botanical and habitat interests only. The survey area in the vicinity of these sites was extended and included a botanical survey of habitats to identify whether their botanical interests extended beyond the designated sites and into or across the survey corridor. The botanical surveys confirmed that habitats within the survey corridor of the Proposed Development were confined to improved grasslands or arable fields and did not provide the same habitat or vegetation community features as those associated with these designated sites. Scattered individual plants of meadow rue *Thalictrum flavum*, a characteristic plant species associated with Ruewood Meadows SSSI were located near ditches on the opposite side of the River Roden to the SSSI, suggesting a remnant population of this plant still persists outside the SSSI where suitable damp conditions exist. The locations of plants and ditches in the vicinity were noted during survey to inform suitable avoidance measures during the construction phase.
- 1.4.85 The direct habitat effects arising from construction of the Proposed Development would be those associated with access and clearance of the

---

proposed route corridor with habitats (and associated species) affected by the felling or cutting back of individual mature trees and scrub and removal of sections of hedgerow. Wayleave corridors will be required when the Proposed Development passes through woodland. Short sections of hedgerows may be temporarily cut back or removed for construction and or maintenance, and would be replaced or reinstated as appropriate on completion of construction.

- 1.4.86 Construction would take approximately 12 months, but this would be phased across the length of the route, with works for the overhead line in any one pole location taking approximately 1 – 2 days. .
- 1.4.87 Removal of trees is normally regarded as a long term effect whereas hedges will be lifted and replaced as a single operation. Creation of temporary laydown areas may affect local habitats within the footprint of such activities, but these effects would be temporary as the areas would be reinstated upon completion of the works.
- 1.4.88 Therefore, no significant adverse ecological effects either direct or indirect are anticipated on designated sites, habitats or species during the construction phase. Direct and indirect effects on protected or notable species are assessed as low magnitude and minor adverse, not affecting populations of any species at a Local, County or National geographic scale. It is considered that effects on individuals potentially present during construction can be suitably avoided through implementation of the CEMP (**DCO Document 6.3.2**), and with respect to European protected species and [REDACTED] subject to specific legislative protection, through derogation licences or LICLs. These measures are readily achievable and can be implemented to ensure the protection of individuals and maintain the favourable conservation status of the local population(s).

### Operational Effects

- 1.4.89 The operational phase of the Proposed Development would not result in any

---

additional habitat loss or fragmentation. Neither will there be a risk of indirect disturbance, to habitats or species other than that already addressed in relation to construction. Habitats around poles would be reinstated and continue to be under agricultural management as previously.

- 1.4.90 Periodic maintenance of the line during the operational phase may cause localized and temporary/short term disturbance when access to poles and the overhead line is required, but this is infrequent and likely to cause little disruption as described in Chapter 3 'The Proposed Development' (**DCO Document 6.3**), and not likely to be significantly different to normal disturbance due to agricultural activities. Periodic vegetation management would be required to maintain a safe clearance of encroaching trees along the overhead line route, involving cutting back of new growth branches where required. This is likely to have negligible additional habitat availability and overall effects.
- 1.4.91 Operational effects are therefore considered to be restricted to the risk of bird collision due to the presence of the overhead line once operational. The potential for increased predation by raptors and other species on vulnerable ground-nesting birds, caused by the additional use of poles and lines as hunting perches, has also been considered. Negligible effects from increased predation are anticipated, as the area already provides an abundance of suitable hunting perches for raptors in the form of trees, hedgerows and other vertical features.
- 1.4.92 The likely effects of collision risk on vulnerable bird species is considered to be of low magnitude. Bird surveys (Appendix 7.5) (**DCO Document 6.7.5**) and consultations with Natural England and the RSPB, undertaken as part of the assessment, have not identified significant sensitivities constraints.
- 1.4.93 Overall the route of the Proposed Development does not constitute a particularly sensitive area for target species of birds and does not support large numbers of vulnerable species such as geese or other waterfowl. Small numbers (1-2 pairs) of lapwing were observed attempting to breed in a small

---

number of the numerous large open fields present across the survey area; however agricultural management and ploughing of fields meant that little or no successful breeding took place. Presence and breeding success of this and other species is most likely to be affected by land management practices in any given year. Regular grey heron flights were recorded in winter passing north-south and intersecting the Proposed Development, but less so in the spring and summer when birds could be expected to remain close to breeding sites. Furthermore, the recorded flights of grey herons were all above the height of the Proposed Development. Flights of geese and other waterfowl across the proposed route were relatively low in number and were also largely above the height of the proposed overhead line. No notable species associated with the Ramsar Sites were recorded during surveys. This demonstrates that the risk of collision is likely to be inconsequential in the context of any species, population of designated sites.

- 1.4.94 The risk of collision is considered to be a negligible or at worst low magnitude effect which would not have any significant effect on local populations of any bird species, including geese, wildfowl or herons, and is assessed as not significant. No specific mitigation is therefore required to address effects.
- 1.4.95 No other significant operation phase effects are considered likely.
- 1.4.96 Once operational it is not considered that the Proposed Development would have any significant effects on habitats, or protected or notable species additional to those considered under the construction phase.

### Operational Effects Summary

- 1.4.97 During its operational life the Proposed Development would comprise above-ground wood pole structures and overhead line providing a new feature within the countryside, with buried cables underground at certain locations not visible at the surface and not considered to affect habitats or species. Once constructed, there would be no moving parts or lighting and the overhead line would only require very occasional visits for maintenance. The wood poles,

---

once installed, would have negligible ongoing ecological effects after construction, occupying a very small footprint and with natural vegetation reinstated on all sides. The overall loss of arable or improved grassland, habitat of low ecological value, is approximately 1.5ha along the whole length of the Proposed Development. Less than 0.5ha of woodland would be affected, most of which comprises young/semi-mature plantation woodland. Land take affecting other habitats is negligible.

- 1.4.98 The poles, being located within farmland and occupying a small above ground footprint at each individual pole location, will not create barriers to wildlife movements or habitat fragmentation effects at ground level.

## 1.5 CUMULATIVE EFFECTS

- 1.5.1 Potentially significant cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. The potential for cumulative effects have therefore been assessed in-combination with:

- Existing developments, either built or under construction;
- Approved developments, awaiting implementation; and
- Proposals awaiting determination within the planning process with design information in the public domain.

- 1.5.2 A list of other developments to be considered within the cumulative assessment sections of the ES has been agreed in consultation with Shropshire Council (see Chapter 4 'Approach and General Methodology' (DCO Document 6.4)).

- 1.5.3 In accordance with CIEEM guidelines, only ecological features that are considered to be important and potentially significantly affected by the proposed scheme require a detailed assessment, however non-significant effects may be come significant when considered in combination with other projects or other impacts, and this has been addressed in the cumulative



assessment.

1.5.4 Cumulative ecological effects may relate to:

- Effects on designated sites or their qualifying interest features (habitats and species);
- Direct or indirect habitat loss or degradation, including habitats of Principal Importance listed under S41 of the Natural Environment and Rural Communities (NERC) Act 2006; and
- Disturbance, habitat loss or displacement affecting the favourable conservation status of populations of protected species or accidental injury or killing of individuals.

1.5.5 The assessment considered how the effects of the Proposed Development would combine and interact with the effects of other developments. Ecological information available on the Planning Portal for these developments was reviewed and any significant residual ecological effects identified. The nature and extent of any ecological effects were also considered in the context of how they, in combination with the identified ecological effects of the Proposed Development, could potentially result in additional and significant adverse effects. Where no significant ecological effects or in-combination effects are identified, it can be concluded that the Proposed Development will not result in a significant cumulative ecological effect.

1.5.6 The Proposed Development will occupy a small working corridor (the Order Limits as described in Chapter 3 'The Proposed Development' (**DCO Document 6.7.3**)), and no other projects are known to be proposed within this location concurrently which are likely to have a significant effect.

1.5.7 There are no cumulative direct effects on designated sites or their associated qualifying interest species from land take. Habitat loss as a result of the Proposed Development will entail small scale permanent loss of approximately 1.5ha of largely low ecological value habitat. With avoidance



---

and protection measures as set out in the Construction Report (**DCO Document 7.2**) and draft CEMP (**DCO Document 6.3.2**), the scale and nature of habitat-related effects are not considered to have any potential for significant cumulative loss of protected habitat or habitats identified as being of Principal Importance when considered in combination with land take required for other projects. Other developments listed also incorporate ecological mitigation measures where relevant.

### Cumulative Construction Effects

- 1.5.8 Construction works and associated disturbance would be confined to the Order Limits. Cumulative effects from construction, with appropriate mitigation, timing of works and construction methods in place, can reasonably be expected to have no significant adverse indirect effects on surrounding habitats or the species they support. Given the geographic spread of the other developments being considered, and the fact that they are likely to be constructed over an extended time period, and at different times, no significant cumulative effects are considered likely to occur.
- 1.5.9 No significant adverse effects on protected or notable species will occur as a result of the Proposed Development with the adopted standard good practice construction management techniques in place. These include specific measures contained within the draft CEMP (**DCO Document 6.3.2**) to ensure the favourable conservation status of great crested newts and other protected species.
- 1.5.10 No significant cumulative effects are anticipated during the construction phase.

### Cumulative Operational Effects

- 1.5.11 All the developments listed, apart from two, relate to residential or agricultural developments, a wastewater treatment facility and a solar farm, all of which do not present significant risks to local populations of species or protected or notable habitats, or to qualifying interest habitat and species of the Midlands

Meres and Mosses Ramsar Phase 1 or 2.

- 1.5.12 Two applications relate to single wind turbines. One (Ref: 15/05475/SCR) lies approximately 3km south of the Proposed Development and has been screened as a non-EIA development by Shropshire council as it was not considered to lie in a 'sensitive area as defined by the Town and Country (Environmental Impact Assessment) Regulations 2011 (applicable at that time). Apart from this screening confirmation, no further ecological information has been submitted in respect of the proposal.
- 1.5.13 The other application (Ref 15/03443/SCR) relates to a single wind turbine located approximately 4.5km south of the Proposed Development. This application has also been screened as non-EIA, and no further information is available on the proposals on the planning portal. Natural England, in its response to the screening consultation stated:
- 1.5.14 'From the information provided they have confirmed that the application site is not located within, adjacent to or in close proximity to any Site of Special Scientific Interest (SSSI) or Special Area of Conservation (SAC), Special Protection Area (SPA) or Ramsar Site and is not likely to significantly affect the interest features for which they are notified'.
- 1.5.15 It is considered that these two single wind turbine proposals, being small, located some distance from the Proposed Development and in an area not considered to be sensitive for birds in general, would give rise to inconsequential effects from collision risk in combination with the Proposed Development. Similarly, all other projects listed in Chapter 12 'Cumulative Effects' of the ES (**DCO Document 6.12**) would be inconsequential in relation to collision risk.
- 1.5.16 The potential for cumulative collision risks to affect local bird populations can be discounted as none of the other projects (mainly residential developments) have elevated collision risks associated with them, apart from two wind turbine projects, for which EIA assessment was not required and which are

considered not to present any cumulative collision risk.

- 1.5.17 No significant cumulative effects during the operation phase have been identified.